

Application No. 09/932,239

NMT1 1002-3
(0747CON1)In the Specification:

Please amend paragraph [0050] of the specification as follows:

[0050] Fig. 2 shows one example layout of the phase shift windows for the pattern of Fig. 1, where the phase shift region is cut along a line [[16]] 5 from the non-critical feature A to the field, along a line 6 from the non-critical feature C to the field, along a line 7 from the non-critical feature D to the field, along a line 8 from the non-critical feature E to the field, and along a line 9 from the non-critical feature E to the field. As a result, phase shift windows 10, 11, 12 are created and assigned a phase value of 2, and phase shift windows 13, 14 and 15 are created and assigned a phase shift value of N, where N is equal to approximately $2 + 180$ degrees, so that desired destructive interference occurs for definition of the desired pattern. In the context of an alternating phase shift mask, it is preferred that N be close to 180 degrees plus 2, such as within plus or minus 10 degrees. Other phase shifting techniques may apply other combinations of phase values, or require stepped phase values so that more than two phase values are used.

Please amend paragraph [0065] of the specification as follows:

[0065] Given a bounded number of identified cutting areas shown in yellow within the adjusted phase shift region in the layout of Fig. 15, a process of selecting cuts and assigning phase values to form phase shift windows is initiated according to present invention. One example layout is shown in Fig. 16, where zero degree phase shift regions (e.g. region [[45]] 48) are identified by irregular square dot hatching, 180 degree phase shift regions (e.g. region [[46]] 49) are identified by diagonal cross-hatching, and the pattern is identified by generally black filler. Opaque background areas are left white in this diagram.

Please amend paragraph [0081] of the specification as follows:

[0081] Fig. 21 is a simplified flow diagram for the process of laying out phase shift windows according to one embodiment of the present invention. The process begins with reading out a layout file defining a complex layer including a pattern to be implemented (block 110). Features of the pattern having a width smaller than a parameter W are removed (block 111). T-shaped and elbow-shaped features are added back (Block 112). The resulting image is saved as an image of "non-critical" features (block 113). Next, features are identified that are separated by a field less than a parameter X across (block 114). "Critical" bridge areas are defined as the fields between such features (block 115). Phase shift regions are created around

Application No. 09/932,239

NMTI 1002-3
(0747CON1)

the pattern, from which phase shift windows will be created (block 116). Possible cut regions are identified based upon the features of the pattern outlined above, and ranked by cost function (block [[170]] 117). Phase values are assigned to regions and decisions are made as to which cuts to use while minimizing the cost function, to create the final layout of phase shift windows (block 118). The layout is saved in a computer readable medium (block 119).

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